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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/032,357	12/21/2001	Stefan Uhlenbrock	150.0111 0101	4965

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EXAMINER	
GUERRERO, MARIA F	

ART UNIT	PAPER NUMBER
2822	

DATE MAILED: 11/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/032,357	Applicant(s) UHLENBROCK ET AL.	
	Examiner Maria Guerrero	Art Unit 2822	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 September 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *8,9*.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

1. This Office Action is the in response to the Amendment filed September 8, 2003. Claims 1-26 are pending.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on June 19, 2003 and September 8, 2003 were filed after the mailing date of the First Action on May 7, 2003. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Objections

3. Claim 15 is objected to because of the following informalities: claim 15 recites: "wherein the polishing surface comprises a fixed abrasive article or **a polishing pad**; and wherein when the polishing surface comprises **a polishing pad**". Appropriate" correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claim 15 is rejected under 35 U.S.C. 102(e) as being anticipated by Russell et al. (U.S. 6,395,194).

Russell et al. teaches positioning a Group VIII metal–containing surface of a substrate to interface with a polishing surface (polishing pad)(Abstract). Russell et al. discloses the Group VIII metal being iridium, platinum, palladium, ruthenium or alloy thereof (col. 3, lines 30-39, 54-57). Russell et al. teaches supplying a planarization composition in proximity to the interface and planarizing the Group VIII metal–containing surface (col. 4, lines 7-35). Russell et al. teaches using a plurality of abrasive particles (Al_2O_3, SiO_2, CeO_2) having a hardness of no greater than about 9 Mohs (col. 5, lines 1-10). Russell et al. shows an oxidizing gas (e.g. Cl_2) that has been added to the planarization composition (col. 4, lines 60-65, col. 6, lines 37-50, col. 7, lines 5-15, col. 10, lines 5-10, 33-40).

The elements must be arranged as required by the claim, but this is not an ipsissimis verbis test, i.e., identity of terminology is not required. In re Bond, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-6, 10-14, 16-19, and 22-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beitel et al. (U.S. 2002/0017063 A1) in view of Weast et al. "CRC Handbook of Chemistry and Physics".

Beitel et al. teaches positioning a Group VIII metal –containing surface of a semiconductor substrate to interface with a polishing surface (Abstract, page 2, paragraph 0019; paragraph 0024). Beitel et al. discloses the Group VIII metal being rhodium, ruthenium, iridium, osmium, palladium, and platinum (page 2, paragraph 0019). Furthermore, Beitel et al. teaches supplying a planarization composition in proximity to the interface and planarizing the Group VIII metal –containing surface (Fig. 5-6, page 4, paragraph 0050-0064). Beitel et al. discloses the planarization composition comprising oxygen, ozone or chlorine (oxidizing gas) (page 2, paragraph 0020; page 3, paragraph 0036).

In addition, Beitel et al. teaches providing a silicon substrate having a patterned dielectric layer formed thereon and a Group VIII metal–containing layer formed over the patterned dielectric layer and applying the planarization method to a capacitor or barrier layer in one step using a fixed abrasive article (Fig. 1-6, page 3, paragraph 0028-0034, 0037-0041; page 4, paragraph 0046-0049).

Beitel et al. is silent about adding the oxidizing agent in the form of a gas. However, a person of ordinary skill in the art would infer this recitation because Beitel et al. shows adding oxygen, ozone or chlorine and those compounds are well known as being in the form of a gas.

Beitel et al. does not specifically show the oxidizing gas having a standard reduction potential of at least about 1.4 versus a standard hydrogen electrode at 25°C. However, Beitel et al. discloses reducing the normal potential E_o of the precious metal.

In addition, Weast et al. is cited as evidenced to show that the standard reduction potential is a well-known characteristic of each material (D-151 to D-154).

Regarding the specific variables claimed, "where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Beitel et al. reference by specifying the standard reduction potential of the oxidizing gas being at least about 1.4 using the information provided by Weast et al. The modification is proper because the oxidizing gas (e.g. Cl_2) disclosed by Beitel et al. has a reduction potential at least about 1.4 (Beitel et al., page 2, paragraph 0020, 0023; Weast et al., Table 1).

6. Claims 1, 7-9, 16-17, 20-21, 26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Russel et al. (U.S. 6,395,194) in view of Weast et al. "CRC Handbook of Chemistry and Physics".

Russell et al. teaches positioning a Group VIII metal–containing surface of a substrate to interface with a polishing surface (Abstract). Russell et al. discloses the Group VIII metal being iridium, platinum, palladium, ruthenium or alloy thereof (col. 3, lines 30-39, 54-57). Russell et al. teaches supplying a planarization composition in proximity to the interface and planarizing the Group VIII metal–containing surface (col. 4, lines 7-35). Russell et al. teaches using a plurality of abrasive particles (Al_2O_3, SiO_2, CeO_2) (having a hardness of no greater than about 9 Mohs) (col. 5, lines 1-10).

Russell et al. shows an oxidizing gas that has been added to the planarization composition (col. 4, lines 60-65, col. 6, lines 37-50, col. 7, lines 5-15, col. 10, lines 5-10, 33-40).

Russell et al. does not specifically show the oxidizing gas having a standard reduction potential of at least about 1.4 versus a standard hydrogen electrode at 25°C. However, Weast et al. is cited as evidenced to show that this is a well-known characteristic of each material (D-151 to D-154).

Regarding the specific variables claimed, "where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Russell et al. reference by specifying the standard reduction potential of the oxidizing gas being at least about 1.4 using the information provided by Weast et al. The modification is proper because the oxidizing gas (e.g. Cl_2) employed by Russell et al. has a reduction potential at least about 1.4 (Russell et al., col. 6, lines 37-46, col. 7, lines 10-15, Weast et al., Table 1).

Response to Arguments

7. Applicant's arguments filed September 8, 2003 have been fully considered but they are not persuasive. Claims 1-14, 16-19, and 22-26 stand rejected.

Applicant argued that Russell et al. and Beitel et al. do not teach the addition of the oxidizing agent as a gas. However, Russell et al. shows an oxidizing gas that has

been added to the planarization composition (col. 4, lines 60-65, col. 6, lines 37-50, col. 7, lines 5-15, col. 10, lines 5-10, 33-40). Beitel et al. discloses the planarization composition comprising oxygen, ozone or chlorine (oxidizing gas) (page 2, paragraph 0020; page 3, paragraph 0036).

Applicant argued that Russell et al. generates a gas in situ and does not teach or suggest the addition of the oxidizing agent as a gas. In the examiner's opinion, a broadest reasonable interpretation of the claims the addition of the oxidizing agent as a gas also includes the generation of the gas in the composition. Therefore, this recitation is meet by Russell et al. disclosure (col. 4, lines 60-65, col. 6, lines 37-50, col. 7, lines 5-15, col. 10, lines 5-10, 33-40).

Webster's II, New Riverside University Dictionary is cited as evidence to show that a person of ordinary skill in the art would infer that Beitel et al. (U.S. 2002/0017063 A1) disclosed the addition of the oxidizing agent as a gas according to the simple definition of the compounds (Webster's II, pages 258, 842).

Furthermore, during patent examination, the pending claims must be "given *>their< broadest reasonable interpretation consistent with the specification." > In re Hyatt, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000). During examination, the claims must be interpreted as broadly as their terms reasonably allow. This means that the words of the claim must be given their plain meaning unless applicant has provided a clear definition in the specification. In re Zletz, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989) >; MSM Investments Co. v. Carolwood Corp., 259 F.3d 1335, 1339-40, 59 USPQ2d 1856, 1859-60 (Fed. Cir. 2001).

The rationale to modify or combine the prior art does not have to be expressly stated in the prior art; the rationale may be expressly or impliedly contained in the prior art or it may be reasoned from knowledge generally available to one of ordinary skill in the art, established scientific principles, or legal precedent established by prior case law. In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). See also In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000).

Applicant's arguments with respect to claims 15 and 27-29 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Webster's II, New Riverside University Dictionary is cited as evidence to show that a person of ordinary skill in the art would infer that Russel et al. (U.S. 6,395,194) and Beitel et al. (U.S. 2002/0017063 A1) disclosed the claimed oxidizing gas (Webster's II, pages 258, 842).

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maria Guerrero whose telephone number is 703-305-0162.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on 703-308-4905. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

María Guerrero
Maria Guerrero
Patent examiner
November 18, 2003